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 * SINCLAIR MILWAUKEE USERS GROUP *
 * P.O. Box 101 Butler, WI 53007 *
 * -----

* THIS MONTH:

- * - Bill On QL Basic
- * - Rudy's SQ NOTES
- * - TS2068 Clock by Dr. Dreger*
- * - Presidents Message
- * - And Other Great Things

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* NEXT MEETING DATE: 04/05/89 *
 * -----

* Send all contributions by the *
 * first day of the month to: *

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 * Editor *
 * SMUG BYTES *
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 * *****

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- *Meeting on 2nd Sun. of the month*
- *QL - R. Hilsmann *
- * - 251 5291 *
- *Meeting date see Spectrum group *
- * *****

(NOTE NEITHER ANY AUTHOR OR SMUG BYTES TAKES ANY RESPONSIBILITY
FOR ANY HARDWARE MODIFICATIONS TO YOUR EQUIPMENT.)

BILL ON QL BASIC

Don't let SuperBasic scare you. It has many new commands and a whole new way of using code.

1. ON - this will GOTO or GOSUB to the line number in the coding depending on the number in the variable. For example:

```
10 x=3
20 on x go to 200, 500, 700, 300
line 20 will go to 700.
```

2. SElect - this will do what ever code calls for until either a new modifier or an END SElect. For example:

```
10 x=3
20 SElect ON x
30 =1,5: GO TO 100
40 =3: stop
50 =10 to 15: GO To 75
```

Note line 30 will go to 100 if x is either a 1 or 5, line 40 will stop only if x is a 3, and line 50 will go to 75 if x is in the range 10 to 15 inclusive.

MULTITASKING ON THE 2068

copyright 1988 by Lloyd Dreger

The following changes are necessary to last months machine code.

```
64824 POKE,0      NO-OP Inst.
64979 241         POP AF
```

Note I have indicated where to call another routine if you desire to do something else before returning. Put it in there with a call as you have all the registers still pushed. But remember you are still in DI mode. The EI at 64986 isn't necessary as there is an EI at the end of the regular interrupt routine. It's there so no one would say he didn't do it.

We now need a basic prog.to start and set the clock. I used ZEUS to compile the program and saved it as clock.bin on our AERCO disk system. Continued on page 6.

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"SQ" NOTES

BY R.A.HILSMANN

Lets visit other computer systems for a change, maybe this will make you appreciate the system you are using now. I used all sorts of computers in the past and still do so at this time, but I have always wondered why people put up with some of them.

Some systems are ancient and outdated in computer terms, and the system I like to talk about today, namely CP/M, is no exception. But sooner or later you may run into a system using CP/M, and it may well be worth to know what to expect.

CP/M stands for Control Program for Microprocessors. Designed to execute user commands and allow the user to use the hardware resources provided by the computer. Unlike the 2068, the Spectrum, or even the QL, which are using a Basic operating system permanently installed in ROM in the computer, most other computers are using a System which has to be installed into the computer after turn on. Only a BOOT program exists to allow you to load the operating system into memory of the computer, which otherwise has nothing but empty memory in place.

Therefore everytime you reset the computer, you will have to re-install the system onto the computer, that is why disks most likely will have the operating system on them, chewing up disk space. Hold on, thats not all you will find on a disk, most will also have PIP on them, which stands for Peripheral Interchange Program, needed to transfer files between devices.

ED (Editor), is another utility program installed onto most disks, this is a crude, and I mean crude form of a word-processor, if you thought the ZX81 or the TIMEX 1000 gave you fits, try using an EDITOR!

To operate a CP/M system computer, you of course have to turn it on first, next you would have to insert a diskette holding the operating system into drive A, then press the appropriate key for the computer you are operating, (maybe the "B" key (for boot)), now ENTER, and the system (CP/M) will be installed into the computers memory. To find out what's on the disk, you could next type "DIR", for directory, this will give you a listing of files on the disk. Simple? Of course it is, at least to this point, but to get all the fine points of the system you would have to buy a CP/M handbook to really understand the system. It is far beyond the scope of these few pages to explain all there is about CP/M.

To load or run a file on a disk simply type the name of the file or program, then press the enter key, but hold it, all files or programs will most likely have an extension to the name, like 'PIP.COM'. '.COM' files can be loaded by just typing the name, but if a program has an extension '.BAS', you would have to install the basic interpreter first, and it would have to be the right basic, such as MBASIC (Microsoft Basic), this of course will not leave much memory on a 64K computer for programing, that's why most systems will manipulate the disks for additional storage. This means that sometimes out of the blue the drives will start up and do their thing while you are using a program.

To just display a text file onto the screen, use the TYPE command, and specify the filename, like:

A> TYPE SAMPLE.TXT then ENTER.

To get a hardcopy of such a file on a printer, enter CTRL 'P' (^P) before you enter the filename, and if all is well, the printer should give you a printout of the file.

To turn the printer off again, enter another control 'P' (press the CTRL key, and press the 'P' key, while holding the control key down).

To change a disk in a drive, switch to the drive by typing either 'A:', 'B:', or 'C:' etc. then ENTER, next remove the old disk, insert the new one, and enter a 'Control C' for what's called a warm boot (that's because you did not reset (cold boot) the computer to do so). The system will then read the disk to install the new directory. I like to point out that a warm boot needs to be performed only if your intentions are to write to the disk. You may just insert a new disk without performing a warm boot if you wish to only read from the new disk.

As you noticed you can switch from drive A to drive B by typing 'B:' as a command:

```
A> B: <ENTER>
B>
```

this will give you the new cursor.

PIP.COM will allow you to make copies of files or programs, It has to be noticed that in order to do so, you will have to specify the drive, then the new file name, next the originating drive, and then the old file name, it should look like this:

```
D:newfile.name=D:oldfile.name
```

The newfile.name and oldfile.name arguments are actual filenames, and the 'D' stands for the letter of the drive. PIP always needs the newfile name first and the oldfile name second separated by an = sign. somewhat cumbersome, but something one gets used to.

PIP will also allow you to copy an entire disk onto another, the command for that is:

```
A> PIP B:=A:*. *
followed by ENTER
```

this would copy the contents of the disk in drive 'A' to drive 'B'.

Transient System Commands
CP/M's standard transient commands are: SYSGEN, PIP, ED, STAT, ASM, LOAD, DUMP, DDT, SUBMIT, and MOVCPM. All are .COM files.

SYSGEN; is used to copy CP/M from one disk to another. Usually used after formatting a new disk. SYSGEN turns an ordinary diskette into a system diskette, in other words, it will put the CP/M system on the new disk from the originating disk.

PIP; is the file transfer program I talked about earlier.

ED; is the editor, used in place of a better word-processor, but most usefull in writing a source file for the assembler (ASM).

STAT; is used to display available disk space and device assignments. Also used to modify device assignments.

SUBMIT and XSUB; submitting a file of commands for execution (shoot the darn thing (pun intended)). Sometimes it may be useful or necessary to execute a sequence of CP/M commands as if they were instructions in a program. For example, if a sequence is frequently used by an operator, it would be convenient to give a name to the sequence, and execute it with a single command, just like a program.

ASM, LOAD, and DUMP; in the world of assembly language, ASM, LOAD, and DUMP are standard terms for operations that allow assembly language programs to work like commands. You could use the commands ASM and LOAD to turn an assembly language source program written with ED into a text file, into a do it yourself transient command, and also use DUMP to display the contents of the tran-

sient command. The term DUMP is often used to describe large scale copy operations, and the act of sending the contents of a program to a printer. CP/M's DUMP 'dumps' the memory area of a program (HEX) onto the terminal display (to send a file in that fashion to a printer, or to do large scale copy operations you have to use PIP).

ASM.COM is the assembler program that translates an assembly language source file into a machine language file (code).

DDT; is a machine code debugging program (disassembler). DDT can be used to correct errors, or bring a file into the main memory in order to save it.

SAVE; will naturally permit you to save any program or file to disk.

MOVCPM; used to reconfigure a version of CP/M to fit another memory requirement (when expanding memory, or to prepare a system for alterations to another hardware environment).

Now that you know something about the CP/M system, you may ask where did it come from, or how did it come about? The CP/M operating system was created by Gary Kildall, while employed as a consultant for Intel Corporation, Gary wrote the first high level language compiler produced by Intel, PL/M. Then, in 1974, he created his first version of a CP/M file system which was designed (at the time) to support a resident PL/M compiler.

CP/M made its initial commercial appearance in 1975 when the first licensing contracts were entered, but went relatively unnoticed for at least a year. During this time, the early version of the editor (ED), the assembler (ASM), and the debugger (DDT) were developed. The first large scale commercial user of this operating system was IMSAI (now defunct), which was licensed to distribute the CP/M version 1.3

that evolved into what IMSAY called IMDOS. CP/M has now evolved into CP/M version 2.2 (and successive versions), which is designed to take advantage of larger storage capabilities of hard disks now in use. MP/M was designed to provide a multi user time sharing environment for multi programming systems.

Not long ago, CP/M was probably one of the most frequently used operating systems on microcomputers. Although it can be criticized by operators, users, and designers who are familiar with more powerful time sharing machines, it serves its purpose, and had become a de-facto standard for many micro-computer users.

One of the main advantages of CP/M is the fact that all CP/M compatible software and files can be shared by users. CP/M has the virtues of any standard operating system, namely compatibility. For this reason, CP/M will probably be used for some time to come, at least as long as the processors on which it usually resides are still being built.

Well I hope this has put some light on the CP/M system, like I said in the beginning, most likely sooner or later you may sit in front of a computer which employs CP/M as an operating system. I hope these few pages have helped you to understand the system better, if nothing else, you may be capable of adapting easier to computers using a similar operating system.

A good source for additional information on CP/M is the CP/M handbook by Rodney Zaks, SYBEX INC. Publ.

That's all folks....

till next month RAH.

MULTITASKING ON THE 2068

continued

1 CLEAR 64799:

CAT "clock.bin",64800,256

2 POKE 65021,195:POKE 65022,76:POKE 65023,253:REM necessary codes to finish the call routine.

3 OUT 244,0:PRINT "":REM OUT is for AERCO Disk users-it may crash without it. The PRINT is necessary as RST 16 woun't work after CLS without it.

4 RANDOMIZE USR 64809:REM Start clock

5 CLS: PRINT AT 5,1;

"A MULTITASKING DIGITAL CLOCK";AT 6,15;"by";AT 7,8;"Lloyd H. Dreger";AT 9,8;"COPYRIGHT 1988"

8 INPUT

"Do you wish to set clock? y/n ";a\$

9 IF a\$="n" OR a\$="N" THEN GO TO 35

10 INPUT "What hour? 00-23 ";a\$

11 IF LEN a\$=1 THEN LET a\$="0"+a\$

12 IF LEN a\$>2 THEN GO TO 10

13 LET y=64834

14 FOR x=1 TO 2:

POKE y,CODE a\$(x):Let y=y+1: NEXT x

15 LET y=y+1

16 INPUT "What min? ";a\$

17 IF LEN a\$=1 THEN LET a\$="0"+a\$

18 IF LEN a\$>2 THEN GO TO 16

19 FOR x=1 TO 2

20 POKE y,CODE a\$(x)

21 LET y=y+1

22 NEXT x

23 LET y=y+1

24 INPUT "What sec? ";a\$

25 IF LEN a\$=1 THEN LET a\$="0"+a\$

26 IF LEN a\$>2 THEN GO TO 24

27 FOR x=1 TO 2

28 POKE y,CODE a\$(x)

29 LET y=y+1

30 NEXT x

35 PRINT "To reset clock--";TAB 8;

" GO TO 5""To STOP clock--";TAB 8;

" RANDOMIZE USR 64800""

"To restart clock--";TAB 8;

" OUT 244,0 and";TAB 8;

" RANDOMIZE USR 64809"

36 PRINT '"DO NOT RUN clock while entering or editing programs or while MOVing and CATing programs to AERCO Disks""Read NOTES to write programs using this clock."

89 STOP

90 RANDOMIZE USR 64800:

REM the stop clock statement

Doing a NEW turns off the clock but a RANDOMIZE USR 64809 restarts it. Once the clock is started you can delete the basic program, so long as you can remember the start/stop addresses. The clock can be reset using the data statement addresses as direct POKE commands.

Now to keep the clock ticking without printing you have to:

POKE 64949,24:POKE 64950,10

To again start printing, repoke with:

POKE 64949,33 :POKE 64950,63

Other then the statement that a CLS must immediately be followed by a PRINT "" so that a RST 16 code works properly, you should avoid writing to line zero in your program. Anything written there would be over written by the clock. This is another reason you don't edit a program with the clock printing.

You can change the AT statement in DATA to print elsewhere. However, don't print it at the bottom of the EDIT/INPUT screen or even on the bottom of the top screen as an input requiring another line will all of a sudden put the clock in the bottom screen.

There you have it. True Multitasking ala the QL. Not multi-processing but time sharing. For those who say it doesn't slow things up, don't believe it. It does slow it up a bit as I found input slower because it had to get info from the routine at address 56 as well. As such it had to run the whole routine to get a character as well, not just check. Anything extra you do slows things up at least a wee bit. However, having a toy do multitasking means that perhaps it isn't a toy.

It hasn't been tested in all cases so there may be other situations that cause problems as well. However, enjoy. Error proof copies of this program is on tape/Aerco disc for a nominal \$5.00 including s&h through SMUG. Box 101, Butler, WI 53007.

Note that this program runs without crashing if the clock started in line 2. It asks for inputs which are fine.

MARCH MEETING

A spirited discussion was held on how many digitizers should be made on speculation, by the club. It was decided to purchase 50 boards. The club will build 6 immediately so we can take them to the fest in D.C. There are ten sold within the club and 7 other inquiries.

Our new Treasurer, (Pancho) Doneis, broke his ankle and limped in using his crutches and reported on our clubs finances. We have just enough to get the digitizer boards.

We had to cancel the IBM emulation because of "No Show". Bill demo'd his window program. This program will, on the QL, allow you to build a window, with a border set to any size, in either mode 4 or 8, place it anywhere on the screen and save it so you can build a new screen and see how they will overlap. You can also print data in the new screen in any CSIZE. When requested you can see what the parameters must be for adding that window to your program. If you are writing a program that will use a window or windows you can use the program to see what the windows will look like.

We had a good turnout with 21 of our members attending. The only thing I would like to see, besides more members, is more hardware at the meeting. How can we see your pet projects if you don't bring them in? Also where are all those ZX81 and TS1000's? Anybody still doing anything on them? I know I would like to see what you are doing. I will insure a tv at the meeting if you need one. Or if anyone needs anything at all at the meeting please call or write.

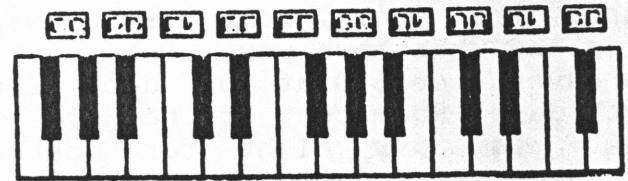
I goofed and did not have the new By-Laws at the meeting, but will have them at this one.

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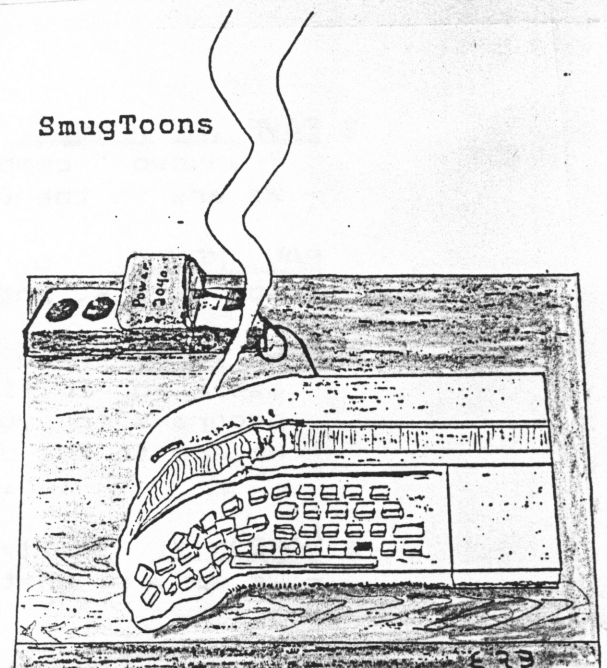
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Oops!

CapitalFest

Where? New Carrollton, MD, route 450. Inside the Howard Johnson's there. When? May 5-7, 1989. That's Fri., Sat. and Sun. With Friday night the banquet and Saturday and Sunday the show, seminars, swap shop and what have you. Cost is \$7 in advance or \$10 at the door for both days. Room cost at the H-J is \$62 + tax per night for double occupado. If you register with CATS the room also includes two tickets to the show each night. Neal and I are going plus Dick and his wife. The distance to drive is approximately 750 miles. In driving time thats arround 15 hours, at 55 mph. The address is:
CATS CapitalFest, P.O. Box 24,
Garrett Park, MD, 20896.

See you at the fest. The club may get a table. We have room. Bill.



PRESIDENTS MESSAGE

The IBM emulator arrived Thursday March 8, 1989. Upon arriving home I brought it up and began to use it. I have gotten as far as doing catalogs on my 3 1/2" drives but am having trouble with them in the IBM mode. Before I go any farther I have to make a cable to connect one 3 1/2 and one 5 1/4 drive.

Upcomming fests:

Madison Swapfest & Computer Fair.
Dane County Expo Center Forum Bldg.
Madison WI. Sunday April 9. 8am to
? \$3 at the door.

CapitalFest - New Carrollton MD.
Friday May 5 to Sunday, March 7.
\$10 at the door.

SWAPFEST Cedarburg, Circle B
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I. Saturday May 6. 8am to 1pm. \$3
at the door.

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THE DIGITIZER.

The club will sell digitizer boards. - For one assembled, tested and shipped the cost will be \$49.95 + \$3 shipping and handling. If you only want the bare board it will be \$19.95 + \$3 s&h. The board has a leading edge connector and is ready for a mother board. If you want a feed thru connector, like the AERCO, there is an extra charge of \$5. This digitizer is for the TS2068.

The price includes the hardware and software, on cassette, for the digitizer. The bare board also includes the schematic and parts list.

I want to thank Dick, Gordy and Marty for the work they put into getting the board designed, etched and working. They also got the prices for the parts, the company to assemble and test it, and a company to etch the boards.

Two things about the digitizer: First you can't have anything in

the dock port. Our first attempts had a Kempston interface in the cartridge port and that caused a lot of trouble. The second problem is in the freeware. Currently it won't work with the AERCO disk interface. Dick is working on it but for now AERCO disk can't be used. You must use the (shudder) tape recorder. It still is worth the delay to put your favorite photos into the computer.

If you wish to purchase a board we feel the turnaround will be 6 to 8 weeks. This offer is open to any who want to put video pictures on your TS2068.

We only expect to make a limited number of these boards so if you are interested please send in your order soon. Depending on orders we will order either 50 or 100 boards. We must have the money with your order as it will cost more than the club can afford to have them built on speculation.

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Editor and contact person: Bill Heberlein (414) 527-2191

SMUG maintains a gratis exchange of newsletters with approximately 30 Users Groups accross the U.S. Clubs not sending a newsletter, to us, for six months are automatically taken off the list.

Newsletter subscription is available for only \$10 per year to non members or free with a club membership. A club membership is \$20 per year for a family.

Advertising rates are \$10 for 1/2 page for six months. The add copy may be changed each month but you must supply the copy.

ZIGGY*



FIRST CLASS MAIL

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The next meeting of SMUG will be held on:

Wednesday, April 5, 1989

6pm Set up
6:30 Members Demo's
7:30 Business Meeting
8:30 Lloyds demo 2068 Clock
Neals QL IBM Emulator
10:30 ?

Location:

Equitable Savings and Loan,
145th and Capitol,
Milwaukee Wisconsin